

Notice of Allowability

Application No.

10/720,794

Examiner

Marina Kramskaya

Applicant(s)

PEARCE ET AL.

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☒ The drawings filed on 29 January 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

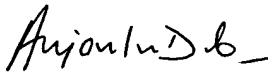
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


ANJAN DEB
PRIMARY EXAMINER

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-20 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Carlson discloses a DC-DC voltage converter **10**, having a controller **15** which generates a pulse width modulation (PWM) (column 1, lines 54-56) switching signal that switchably controls operation a switching circuit containing first and second electronic power switching devices (**20**, **21**) coupled between respective power supply terminals (V_{IN} , **GND**), and having a phase node thereof coupled through an inductor **14** to a regulated voltage output terminal V_{OUT} , an arrangement for deriving a measure of current through said inductor I_L . Carson further discloses a controller that is operative to time division multiplex **56** the activation of said one of said first and second electronic power switching devices.

Schuellein discloses the DC-DC voltage converter, as taught by Carlson above, and further teaches one of said first and second electronic power switching devices comprises a high side electronic power switching device **205** (FIG. 2).

Carson and Schuellein teach a multi-phase embodiment of the same with respective controllers.

However, the prior art fails to teach the use of a pilot switching device and the auxiliary switching device, as required by the applicant. Further, the prior art fails to

teach current calibration constant and the calculations pertaining to the calibration constant.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bradsley, US 2003,0233202 A1, teaches of a DC-DC control apparatus where a current calibration constant is derived from a pilot and the DC-DC converter. However, Bradsley fails to teach first and second switching devices and the relation between the switches and the pilot.

Throngumchai et al, US 6,812,722, discloses a control device with switching devices comprising a power transformer 1 (or the "auxiliary electronic power switching device") and a mirror transformer 2 (or the "pilot electronic power switching device"), (column 4, lines 16-17) and further monitoring current at each device. However, the auxiliary and pilot electronics are not taught by Throngumchai to be in a DC-DC converter or analogous environment.

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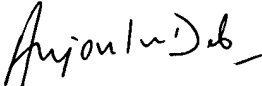
Omura et al., US 6,534,998, discloses a PWM controller with a first and second power switching devices where current and voltage are monitored.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Kramskaya whose telephone number is (571)272-2146. The examiner can normally be reached on M-F 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on (571)272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MK


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